

Charge to Participants

Pollution Prevention through Nanotechnology Conference

Background:

To better understand the benefits that nanotechnology can offer by preventing pollution, and to encourage development of nanotechnology that offers such benefits, EPA convened a multi-stakeholder Steering Committee to plan a *Pollution Prevention through Nanotechnology Conference*. The Steering Committee helped refine goals and set the content for the conference.

To emphasize the importance of the responsible development of nanotechnology, conference speakers and attendees are encouraged to apply “life-cycle thinking” as they make presentations or participate in conference sessions. Life-cycle thinking involves consideration of environmental and human health endpoints such as toxicity and exposure that occur over the material’s life cycle. Design, production, use, and disposal are all relevant to life-cycle thinking. While these aspects may not be specifically identified in each conference session, they will be considered throughout.

Questions:

The questions below are intended to focus presentations and discussions at the conference. Answers to these questions could help guide subsequent work in P2 through nanotechnology.

1. Which nanotechnologies show the greatest promise for preventing pollution?

Considerations:

- This question should be viewed through the lens of life-cycle thinking to minimize the possibility of unintended consequences.
- Which pollution prevention applications are the most likely to find real-world applications?
- What barriers exist to the adoption of nanotechnology-enabled pollution prevention applications?

2. What are the most promising areas of research on pollution prevention applications of nanotechnologies?

Considerations:

- Which research areas could improve our understanding of the full life cycle of nanomaterials?
- How can the beneficial properties of engineered products of nanotechnology such as increased surface activity, greater conductivity, improved strength-weight ratio, altered optical properties (changes in color or opacity), and flame retardancy be used to improve materials and products and reduce the production of pollutants at their source?

3. What recommendations do conference participants have for promoting and encouraging pollution prevention in the development and application of nanotechnology?

Considerations:

- What actions could be taken, and by whom?

- What mechanisms, programs, or associations could promote the research, development, and adoption of such applications?
- What role can EPA programs play?